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What They Do

Cement Masons pour, smooth, and finish concrete surfaces such as floors, walls, sidewalks, and curbs using hand and power tools. Their work encompasses small projects, such as backyard patios, as well as large jobs such as bridges and interstate highways.

Before concrete is poured, Cement Masons (also called Concrete Finishers) check the forms that hold the concrete to see that they are properly constructed. During the pour, laborers spread the concrete to the desired depth using shovels and rakes. On small jobs, Cement Masons mix, pour, spread, and smooth the concrete. On larger jobs, Masons work in concert with cement trucks, which bring the wet concrete as close to the pour as possible. Sometimes, wheelbarrows or concrete pumping trucks are used to transfer the mix from the cement truck to the jobsite. On larger jobs, Masons work as part of a crew.

Cement Masons level, smooth, finish, and shape the concrete surfaces, using a variety of hand tools such as straightedges, jointers, edgers, tamps, floats, and trowels. Power trowels may be used on large-scale projects, but corners, edges, and hard-to-reach places must still be finished by hand. They remove rough spots from surfaces with power grinders, hammers, and chisels, and patch holes with a fresh cement mixture. Cement Masons can create desired textures and colors using a variety of brushes, belts, coloring powders, and terrazzo (marble) chips. Crew leaders may also direct the preliminary work such as setting forms or grading soil. Cement Masons must be familiar with the characteristics of various cements and concrete mixes and be knowledgeable about the effects of weather upon the curing rate of concrete.

Tasks

- ▶ Apply hardening and sealing compounds to cure surface of concrete, and waterproof or restore surface.
- ▶ Apply muriatic acid to clean surface, and rinse with water.
- ▶ Check the forms that hold the concrete to see that they are properly constructed.
- ▶ Chip, scrape, and grind high spots, ridges, and rough projections to finish concrete, using pneumatic chisels, power grinders, or hand tools.
- ▶ Clean chipped area, using wire brush, and feel and observe surface to determine if it is rough or uneven.

Cement Masons and Concrete Finishers

- ▶ Mix cement, sand, and water to produce concrete, grout, or slurry, using hoe, trowel, tamper, scraper, or concrete-mixing machine.
- ▶ Mold expansion joints and edges, using edging tools, jointers, and straightedge.
- ▶ Monitor how the wind, heat, or cold affect the curing of the concrete throughout the entire process.
- ▶ Set the forms that hold concrete to the desired pitch and depth, and align them.
- ▶ Spread, level, and smooth concrete, using rake, shovel, hand or power trowel, hand or power screed, and float.

Detailed descriptions of these occupations may be found in the Occupational Information Network (O*NET) at online.onetcenter.org.

Important Skills, Knowledge, and Abilities

- ▶ Building and Construction — Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.
- ▶ Equipment Selection — Determining the kind of tools and equipment needed to do a job.
- ▶ Monitoring — Monitoring/assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- ▶ Mathematics — Using mathematics to solve problems.
- ▶ Operations Analysis — Analyzing needs and product requirements to create a design.
- ▶ Operation and Control — Controlling operations of equipment or systems.
- ▶ Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
- ▶ Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
- ▶ Information Ordering — The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- ▶ Arm-Hand Steadiness — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
- ▶ Multilimb Coordination — The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.
- ▶ Trunk Strength — The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without 'giving out' or fatiguing.
- ▶ Wrist-Finger Speed — The ability to make fast, simple, repeated movements of the fingers, hands, and wrists.
- ▶ Static Strength — The ability to exert maximum muscle force to lift, push, pull, or carry objects.
- ▶ Stamina — The ability to exert yourself physically over long periods of time without getting winded or out of breath.
- ▶ Extent Flexibility — The ability to bend, stretch, twist, or reach with your body, arms, and/or legs.

Cement Masons and Concrete Finishers

Work Environment

Cement Masons typically work out-of-doors on construction sites. Cement Masons are exposed to most types of weather, except heavy rain or snow, and must work around wet concrete. Potential hazards include the possibility of falls, falling objects, back injuries, knee injuries, and cement poisoning. Protective equipment includes rubber boots, gloves, hard hats, knee pads, face masks (for cement dust), and safety glasses. This work is strenuous and involves much pushing and pulling, reaching and handling, bending and stooping, kneeling and crawling, and walking. The work may require climbing or working from scaffolds and may also involve lifting and carrying materials weighing up to 100 pounds. Some Cement Masons belong to the Cement Masons' Union. Some locals of this union provide their apprentices with a set of hand tools, boots, and knee pads.

Cement Masons usually work 8-hour shifts, Monday through Friday. Depending on the union contract, overtime pay is time and a half for the first 3 hours over an 8-hour shift and double time thereafter.

California's Job Outlook and Wages

The California Outlook and Wage table below represents the occupation across all industries.

Standard Occupational Classification	Estimated Number of Workers 2004	Estimated Number of Workers 2014	Average Annual Openings	2006 Wage Range (per hour)
Cement Masons and Concrete Finishers				
47-2051	28,500	35,300	1,250	\$13.90 to \$24.67

Wages do not reflect self-employment.

Average annual openings include new jobs plus net replacements.

Source: www.labormarketinfo.edd.ca.gov, Employment Projections by Occupation and OES Employment & Wages by Occupation, Labor Market Information Division, Employment Development Department.

Trends

Employment in this industry is growing much faster than the average of all occupations in California over the next few years. The state's population is expanding at a rapid pace and is expected to continue to grow at a significant rate for several years. This, combined with increased demand for both commercial and residential remodels, means that employment opportunities will remain strong through 2014 and likely beyond that.

Training/Requirements/Apprenticeships

Cement Masons usually follow one of the following training paths:

- ▶ Formal apprenticeship
- ▶ Community college programs or certificates
- ▶ Vocational school
- ▶ Extensive on-the-job training

Training for this occupation is through the apprenticeship program provided by the Cement Masons' Union. The apprenticeship consists of three years' on-the-job training and classroom instruction designed to give a broad, working knowledge of the trade. To become an apprentice a person must be at least 17 years of age and have a job offer from a contractor willing to take on an apprentice. There are no specific educational requirements for becoming an apprentice; however, high school drafting, mathematics, and shop courses may be helpful.

Cement Masons and Concrete Finishers

Recommended High School Course Work

Most employers prefer applicants who have at least a high school diploma or equivalent. High school preparation should include courses in drafting, shop, basic mathematics, and English.

Where Do I Find the Job?

Cement Masons and Concrete Finishers are employed primarily by general contractors and subcontractors; a few work for local governments. Contacting employers directly is a good way of finding employment. For members of a union, jobs can also be found through the union hall.

Use the *Search for Employers by Industry* feature on the *Career Center* page at www.labormarketinfo.edd.ca.gov to locate employers in your area. Search using keywords from the following construction industry names to get a list of private firms and their addresses:

- ▶ Commercial Building
- ▶ Employment Placement Agencies
- ▶ Highway, Street, and Bridge
- ▶ Industrial Building
- ▶ Landscaping Services
- ▶ New Multifamily Housing
- ▶ New Single-Family Housing
- ▶ Other Heavy Construction
- ▶ Residential Remodelers
- ▶ Temporary Help Services

For local listings of contractors, search these **yellow page** headings for listings of private firms:

- ▶ Building Contractors, Commercial/Industrial
- ▶ Building Contractors, General
- ▶ Concrete Contractors
- ▶ Concrete Products
- ▶ Foundation Contractors

Where Can The Job Lead?

Cement Masons can branch out into related fields, such as bricklayer, stucco mason, pool plasterer, and similar. They can also obtain a special trades contractor's license or a general contractor's license. This permits them to work unsupervised and to hire other workers.

Other Sources of Information

Associated General Contractors of America
www.agc.org

National Concrete Masonry Association
www.ncma.org

Operative Plasterers' and Cement Masons' International Association
www.opcmia.org

Portland Cement Association
www.cement.org

California Department of Consumer Affairs, Contractors State License Board
www.cslb.ca.gov

California Department of Industrial Relations
www.dir.ca.gov